# Greenhouse Pests Beware

## Old World Hunter Fly Now in North America

There's bad news for many insects that pester North American greenhouses. Scientists from Cornell University and ARS have reported the first-ever identification on the continent of the Old World hunter fly, *Coenosia attenuata*.

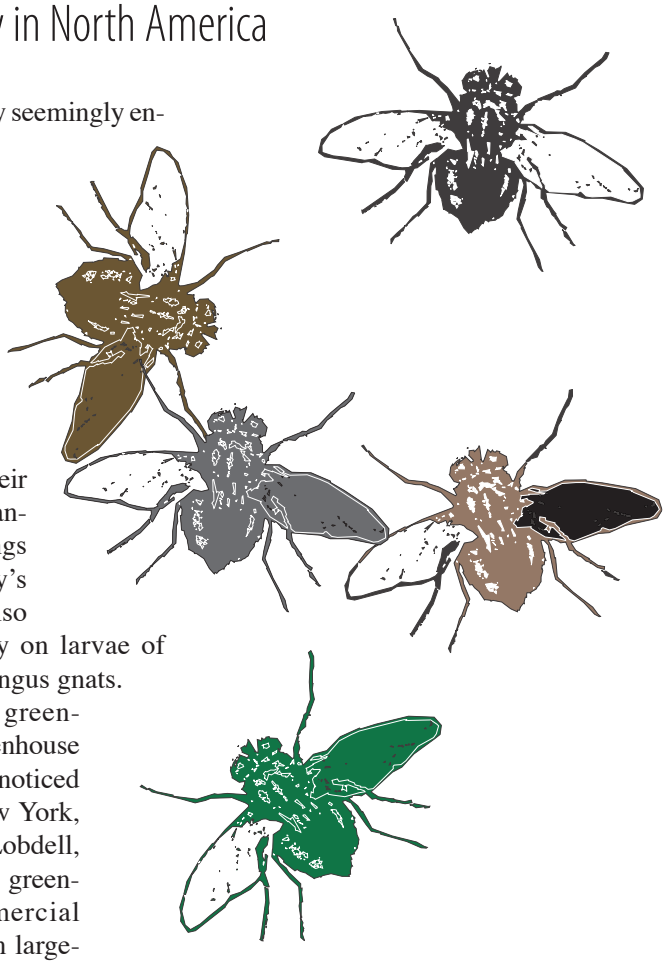
This winged predator from Europe, where it's also known as the "killer fly," has a taste for some of the insects greenhouse keepers find most distasteful: fungus gnats, shore flies, leafminers, fruit flies, moth flies, and some leafhoppers.

"Hunter flies were originally described in southern Europe," says ecologist Steve Wraight. He's in ARS's Plant Protection Research Unit, which is based on Cornell's Ithaca, New York, campus. "But they were found in South America before they were seen here. So, this fly's apparently been on the move for quite a while."

In fact, hunter flies have been reported in southern Asia, northern and southern Africa, the Canary Islands, New Guinea, and Australia, as well as in the Americas. "We're not certain exactly how it got to the New World," says Wraight, "but it may have come over via the horticulture industry, in soil or plant material."

Hunter fly research is focused on increasing our knowledge of fly biology, including predatory behavior and rearing requirements. It is funded through USDA's Floriculture and Nursery Research Initiative. Initial studies were conducted by Cornell graduate student Emily Sensenbach, under the direction of Wraight and Cornell associate professor John Sanderson. *C. attenuata* is from the same insect family as the common house fly (Muscidae) and is similar in appearance. But this fly lives up to its name—and not just because it preys on other flying insects.

The Old World hunter fly seemingly enjoys a challenge. "They sit, wait, and only pursue prey that are in flight," says Wraight. "If an insect is not flying, they won't chase it, even if it's close by." The flies catch their targets, puncture them with a daggerlike mouthpart, and consume their innards. They can turn cannibalistic when the pickings get scarce. The hunter fly's soil-dwelling larvae are also predatory, feeding mainly on larvae of other insects, including fungus gnats.



Hunter flies colonize greenhouses by settling into greenhouse soil. The insect was first noticed in Onondaga County, New York, in 1999 by Elise Schillo-Lobdell, a contractor working as a greenhouse scout, at a commercial greenhouse specializing in large-scale poinsettia production. Specimens were sent to Cornell in 2002 and identified by senior extension associate Richard Hoebeke. Since then, many more specimens have been collected on sticky-card traps set for monitoring pest populations in other greenhouses across New York, as well as at a site in Ontario, Canada. They've also been collected from a trap in Los Angeles County, California.

Wraight sees considerable potential for using hunter flies in biological control. "We could start by developing methods to increase populations of flies already in the greenhouse," he says. "This might be done by providing a stable soil environment to ensure survival of the fly's immature stages."—By **Luis Pons,** ARS.

*This research is part of Crop Protection and Quarantine, an ARS National Program (#304) described on the World Wide Web at www.nps.ars.usda.gov.*

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